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US 4686554 A US 4583122 A Document ID Kind Codes USPAT 1987081 Sourc USPAT 1986041 Issue Date 08 Page s Imaging display device converter Photoelectric Title collector region, a p base region disposed contiguous to the n.sup.and a first electrode connected to the emitter region; and a storage region, an n.sup.+ emitter region disposed contiguous to the base region, or n.sup.+ collector region an n.sup.- region disposed contiguous to the example of the photosensor element comprising: a transistor including an n substrate into electric signals, and a large number of electrooptic disposed in a large number between the substrates and in adjacency to one capacitor constituted by the base region, an electrically insulating A photoelectric converter comprising a photosensor element, typical photoelectric elements and in a predetermined relationship of elements which are disposed between the other substrate and the respective of the substrates and which convert light signals from outside the one predetermined interval therebetween, photoelectric elements which are An imaging display device characterized by comprising a pair of transparent substrates which are arranged in opposition to each other with a region disposed contiguous to Abstract 257/443 Current 348/792 ဓ္က Retrieva Classif 257/291 ; 348/294 Current XRef 396/373 Ohwada, Junichi , et al. Ohmi, Tadahiro , et al. Inventor U X Ø ი Ħ **ب** N ω 4 σı

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| | | | | Photoelectric converter | | | | .• | | | | | Photoelectric converter | | | | ritle |
| region disposed contiguous to | capacitor constituted by the base region, an electrically insulating | and a first electrode connected to the emitter region; and a storage | region, an n.sup.+ emitter region disposed contiguous to the base region, | collector region, a p base region disposed contiguous to the n.sup | or n.sup.+ collector region an n.sup region disposed contiguous to the | example of the photosensor element comprising: a transistor including an n | A photoelectric converter comprising a photosensor element, a typical | | region disposed contiguous to | capacitor constituted by the base region, an electrically insulating | and a first electrode connected to the emitter region; and a storage | region, an n.sup.+ emitter region disposed contiguous to the base region, | collector region, a p base region disposed contiguous to the n.sup | or n.sup.+ collector region an n.sup region disposed contiguous to the | example of the photosensor element comprising: a transistor including an n | A photoelectric converter comprising a photosensor element, a typical | Abstract |
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| | | | | Ohmi, Tadahiro , et al. | | | | | •••••• | | | | Ohmi, Tadahiro , et al. | •••••••••••• | | | Inventor |
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5 US 4954895 A US 4942474 A Document ID Kind Codes USPAT USPAT Sourc 1990090 17 Issue Date 1990071 7 Page s conversion elements substrate semiconductor integrated at a surface of a photoelectric including imaging device Solid-state photo-sensitivity elements arranged to provide conversion elements and photo-electric having Solid-state improved imaging device charges which are stored in other circuit incident ritle stored in the photodiodes in accordance with the incident lights 348/301 in a transistor constituting part of theses active elements is provided in the MOS type transistors, connected to each of the photodiodes. A MOS type predetermined order. This reading means includes active elements, such as matrix configuration and reading means for reading out signal charges A solid-state imaging device has a plurality of photodiodes (photoelectric light, in a predetermined order, is disclosed in which device the read-out a surface of a semiconductor substrate in a transistor connected to a photodiode, part of the active elements are used means is made up of a plurality of active elements such as a MOS reading out signal substrate so as to form a matrix and read-out means for conversion elements (for example, photodiodes) arranged on semiconductor A solid-state imaging device including a plurality of photoelectric as a pixel amplifier for path of the transmitting conversion elements) formed Abstract 348/301 Current OR Retrieva Current Classif 257/292 Akimoto, ; 348/273 Hajime ; 348/310, et al. 348/241 Akimoto, 348/241 Hajime , 348/310 , et al. Inventor d (C) a М μ N . 🔲 ω 4 σ

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| | | | | Photoelectric converter with phototransistor and refresh means | | | | | | | : | signal electric charges therethrough | pairs of switching MOS transistors for | Solid-state imaging device having series-connected | | | Title |
| region disposed contiguous to | capacitor constituted by the base region, an electrically insulating | and a first electrode connected to the emitter region; and a storage | region an n.sup.+ emitter region disposed contiguous to the base region, | collector region, a p base region disposed contiguous to the n.sup | or n.sup.+ collector region. an n.sup region disposed contiguous to the | example of the photosensor element comprising: a transistor including an n | A photoelectric converter comprising a photosensor element, a typical | in a semiconductor provided | | formed in the semiconductor substrate and a second MOS transistor formed | includes a series connection of a first MOS transistor switching element | signal lines by scanning a plurality of switches. Each of the switches. | individual light receiving elements are sequentially read out through | light incident upon the light receiving elements and stored in the | formed in a semiconductor substrate. Signal electric charges generated by | A solid-state imaging device has a plurality of light receiving elements | Abstract |
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| | | | | Ohmi, Tadahiro , et al. | •••• | | | | | | | | Akimoto, Hajime , et al. | | | | Inventor |
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| | | ••••••••••••• | | • | | image recording medium by a writing reference light of spherical or plane | | | | | | | *************************************** | *************************************** | | | |
| | en la deservación de | | | | | wave form and a signal light containing image information which interfere. | | | 348/40 ; 349/1 | | | | | ••••••••••••••••••••••••••••••••••••••• | | | |
| 9. 5132811 A | ram. | USPAT | 1992072 | 32 | Holographic operating optical apparatus | with each other to form a hologram, and means for irradiating 359/6 the hologram | 359/6 | | 349/172 | Iwaki, Tadao , et al. | | | | | | | \sqcup |
| | -1 - 23 | | | | | by a reading reference light in the opposite direction of the reference | | | ; 359/7; 706/40 | | | | *************************************** | | | | |
| | * * * . * | | | | | light to thereby reconstruct the image information. The image recording | | | | | ••••• | | *************************************** | | | | |
| | | | | | | medium is comprised of a photoconductive layer, an optical reflective | | | * * | | | | | | | | |
| | | | | | | layer, a pair of liquid | | | | | | | | | · | | |
| | | | | | • | A ferroelectric device that comprises a polarizing thin film of BaMF.sub.4 | | | | | | | | | | | 1 |
| | - , , , | | | | ferroelectric thin | deposited on a substrate. Ba is barium, M is one of the metals of the | | | 257/31/ | | | •••••• | | | | | |
| 10 US 5146299 A | | USPAT | USPAT 1992090 3 | 36 | film material, method of deposition, and devices | group consisting of iron (FE), manganese (Mn), cobolt (Co), nickel (Ni), | 257/295 | | ; Lampe, 361/321.1 Donald; 365/145 R. | Lampe, Donald R. | | | | | | | ш |
| | ing service | | | | same | magnesium (Mg), and zinc (Zn). The substrate is silicon, sapphire, or | | | ; 365/176 | , et al. | | | | | | | |
| | | | | | | gallium arsenide. A non-volatile NDRO and DRO memory cell and methods for | | | | | | *************************************** | | | | | |
| | | | | | ٠ | depositing the thin film. A | | | | | | | | | | | |

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| Three dimensional CCD image sensor sensor with scanning circuit | Title |
| receiving regions being formed on a two-dimensional plane; a plurality of N type VCCD regions being formed under said plurality of N type light receiving regions; a series of arrangement that said plurality of N type light receiving regions and said plurality of N type VCCD regions are formed opposite to each other being configured in sequence at a desired minterval; a desired area of a charge transfer path being formed each of said plurality of N type VCCD regions are comprising a photosensor element comprising a transistor including an n or n.sup region disposed contiguous to the region disposed contiguous to the region disposed contiguous to the connected to the emitter region; and a storage capacitor constituted by the base region, an electrically insulating region disposed contiguous to the capacitor constituted by the base region disposed contiguous to the region disposed contiguous to the capacitor constituted by the base region, an electrically region disposed contiguous to the capacitor constituted by the base region disposed contiguous to the capacitor constituted by the base region disposed contiguous to | Abstract A three-dimensional CCD image sensor comprising a plurality of N |
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| Lee, Sung M. | Inventor |
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| | | medsuring a thickness of a multilayered sample using ultraviolet light and light with wavelengths longer than ultraviolet | Method of | | Integrated AFM | Title |
| | calculated based on the peak position. After filtered by low-pass filtering, the frequency converted spectrum is reverse Fourier transformed to obtain spectral | spectrum to identify a peak which expresses interference caused by a silicon film. An approximate value d2' of the film thickness of the silicon film is | Spectral reflection ratios with respect to a second wavelength range are obtained and Fourier transformed to derive frequency converted spectrum. A | distal end is arranged at the free end. The cantilever is formed by Stacking a passivation layer, a piezoresistive layer, and a silicon layer. Electrodes electrically connected to the piezoresistive | An integrated AFM sensor includes cantilever which has two beams extending from a support portion. The beams are integrated with each other at their ends to form a triangular free end, and a probe having a sharp | Abstract |
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| | • | | | Image signal processing device | | | - - | | | 1 | 5 3 4 | | X-ray imaging system and solid state detector therefor | | | | Title |
| as the quantized error data by subtractors. An error data sunthesizing | the DCT coefficients output from the DCT processing circuit are determined | reproduced. The differences between the reproduced DCT coefficients and | inverse quantization processing circuit, the DCT coefficients are | processing circuit and an inverse quantization processing circuit. In the | quantization processing circuit, then input to a Huffman encoding | stored in an image memory. The DCT coefficients are quantized by a | A DCT processing circuit outputs DCT coefficients based on image data | substratetobroduceamomolithic | 9 9111000000000000000000000000000000000 | metallization layers of the sensor. An alternative embodiment incorporates | registers and bond pads superimposed over the pixel array in the upper | preferably utilizes 4-side abuttable sensor arrays having imbedded shift | similar to a CCD array to shift data from the array. The detector | circuits. The pixel architecture of the detector utilizes a technique | circuits, and a ceramic layer. The ceramic layer overlays the processing | An x-ray detector includes a scintillator, a sensor array, processing | Abstract |
| | | | | 358/426 | | | | | •••• | | | | 250/370 | | | | Current OR |
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| | | | | Abe, Nobuaki | | | | | **** | , | | | Cox, John D. | , | | | Inventor |
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18 17 US 5582640 A US 5563431 A Document Kind Codes USPAT USPAT 8 1996100 70 Sourc 0 1996121 154 Issue Date Page s Photoelectrical converter with refresh means Semiconductor substrate such that an average device and its inter-atomic distance of main fabricating method constituent Title orystallization energy is applied to the amorphous thin film to perform inter-atomic distance of the elements in single crystal, and element of the amorphous thin film is 1.02 times or more of an average A single crystal and a polycrystal having an excellent crystal quality and conductivity type and disposed electrically connectable to an output growth at low temperatures. An amorphous thin film is deposited on circuit including a capacitive load, and a second main electrode region of semiconductor of a second conductivity type different from the first form a single crystal. In another solid phase providing a highly reliable semiconductor device are formed by comprising a transistor including a control electrode region having a semiconductor of operation and refresh operation. The photoelectric converter includes a the second conductivity type, a first conductivity type, first main electrode region operation, readout A photoelectric converter is adapted for an accumulation solid phase growth to thereby Abstract a 117/8 Current OR 257/291 Retrieva 1 Current Classif ; 438/166 Okada, ; 438/481 Takako ; 438/486, et al. 250/208.1 257/292 257/443 Ohmi, 257/446 Tadahiro 257/448, et al. 117/930 Inventor ď to C P H N w ٨ (J

20 19 US 5642129 A US 5604364 A Document Kind Codes USPAT 1997062 18 USPAT 8 1997021 69 Sourc 0 Issue Date Page Photoelectric converter with vertical output lines Color sequential display panels Title active matrix display panel Color stripes are used to generate sequential selectively actuating pixel electrodes in the active matrix display includes a random access data scanner and random access spec scanners. By circuitry using single crystal silicon technology. The control electronics A color active matrix display system allows random access of pixel collector region, a p base region disposed contiguous to the n.sup.or n.sup.+ collector region an n.sup.- region disposed contiguous to the displayed on the region, compressed video information can be directly active matrix electrodes. The control electronics is fabricated with the and a first electrode connected to the emitter region; and a storage region, an n.sup.+ emitter region disposed contiguous to the base region, capacitor constituted by the base region, an electrically example of the photosensor element comprising: a transistor including an n A photoelectric converter comprising a photosensor element, typical region disposed contiguous to insulating color systems to produce Abstract 345/100 Current OR 257/291 Retrieva Classif 250/208.1 ; 257/292 Ohmi, ; 257/443 Tadahiro ; 257/448, et al. ; 307/117 ; 345/92 ; 345/98 345/88 Current XRef Matthew , et al. Zavracky Inventor U X CO a W μ N ω • G

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| *************************************** | | • | | display apparatus with color sequential illumination | Head-mounted | | | | | | | Image signal processing device | | | | | Title |
| color systems to produce a | active matrix display panel. Color stripes are used to generate sequential | region, compressed video information can be directly displayed on the | selectively actuating pixel electrodes in the active matrix display | includes a random access data scanner and random access spec scanners. By | circuitry using single crystal silicon technology. The control electronics | electrodes. The control electronics is fabricated with the active matrix | A color active matrix display system allows random access of pixel | image data. Expanded image | High resolution image data is generated based on the first and second | quantization, and Huffman encoding, and is recorded to an IC memory card. | <pre>image data is then subjected to a discrete cosine transformation (DCT),</pre> | half the distance between the centers of two adjacent pixels. The first | data is offset from the corresponding pixel of the first image data by | image data based on the same optical image. Each pixel of the second image | An image signal processing device generates first image data and second | | Abstract |
| | | | | 345/8 | | | | | | ••••••••••• | | The 386/109 | *************************************** | • • | | | Current |
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| | | | *************************************** | Zavracky , Matthew , et al. | •••••••••• | | *************************************** | | | | | Abe, Nobuaki | | | | | Inventor |
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| An image signal processing device accordates first image data hased on the same second the size image signal processing device accordates first image sach pixel of the same optical image sach pixel of the sace of the sac | 3 998020 | 199711. | <u> </u> |
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| Abstract Current Coursels Coursels Coursels Coursels Coursels Coursels Inventor V S C P 1 2 3 1 | Image pickup device in which the light receiving element, the drive circuit for illuminating means, and the drive circuit for the light receiving element are on the same chip | Image signal processing device | Title |
| Classif XXRef Inventor U S C P 1 2 3 238/397 348/405 348/405 348/412 358/1124 250/214.1 Uemo, 355/4275 Isamu 355/427, et al. 250/214.2 Uemo, 355/427, et al. 250/214.1 Uemo, 355/427, et al. | An image pickup device comprises illuminating means for illuminating an object and an image pickup element for picking up an image of the object. An improvement is in that a drive circuit for driving the illuminating means and a control circuit for controlling the driving of the image pickup device are integrated one chip, | An image signal processing device generates first image data and second image data based on the same optical image. Each pixel of the second image data is offset from the corresponding pixel of the first image data by half the distance between the centers of two adjacent pixels. The first of discrete cosine transformation quantization, and Huffman encoding, and is recorded to an IC memory card. High resolution image data is generated based on the first and second image data. Expanded image data. | Abstract |
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| Itor V S C P 1 2 3 | 250/214.1 ; 358/475 ; 358/482 | • | Current XRef |
| U S C P 1 2 3 | Ueno, Isamu , et al. | Abe, . Nobuaki | Inventor |
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25 26 US 5781164 A US 5751261 A Document ID Kind Codes USPAT 298051 26 USPAT 1998071 21 Sourc e Issue Date Page 8 Matrix display systems Control system for display panels Title substrate using a lift-off and transfer process. Performance is further structure is removed from the substrate and transferred to a glass resolutions by fabricating the control circuitry and passive matrix control apparatus comprises a video interface, a column driver, and dual substrate and transferred to a glass substrate as a single piece. The control apparatus and the active matrix are lifted from a silicon electrodes together as a single monolithic device. The electrodes and the fabricated with the active matrix as a single integrated SOI circuit. The A control apparatus for an active matrix liquid crystal display device is control circuitry are fabricated as an SOI structure on substrate. The A passive matrix display device obtains fast response times and high multiple-frequency scanning display device. The polarities of the display row drivers. The video interface operates the active matrix as a pixels are reversed on every came...bu...complacity... Abstract 345/87 345/55 Current 유 Retrieva Classif 345/206 Current 345/99 Jeffrey, et al. Matthew , et al. Jacobsen Zavracky Inventor U ល ი 'n μ N ω . 4 σ

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| | N 6 | 00138 | Page |
| | Semiconductor device having at least one field oxide area and CMOS vertically modulated wells ((VNW) with a buried implanted layer for lateral isolation having a first portion below a well, a second portion forming another, adjacent well, and a vertical po | Electronic imaging apparatus hayving hierarchical image data storage structure for computer-compatible image data management | Title |
| the field oxide which kills | CMOS vertically modulated wells have a structure with a buried implanted layer for lateral isolation (BILLI). This structure includes a field oxide area, a first retrograde well of a first conductivity type, a second retrograde well of a second conductivity type adjacent the first well, and a BILLI layer below the first well and connected to the second well by a vertical portion. This structure has a distribution in depth underneath | An image incident on an image sensor is photoelectrically converted to digital image data and stored on a storage device or medium in a hierarchical form as a file in a directory or subdirectory supported by a disk operating system. In this electronic | Abstract |
| | 257/369 | 707/200 | Current OR. |
| | | | Retrieva 1 Classif |
| | 257/350 ; 257/351 ; 257/371 ; 257/372 Borland ; 438/226 John O ; 438/526 ; 438/529 | 348/231 ; 348/232 ; 707/100 ; 707/104 | Current XRef |
| | 7/350 257/351 257/371 257/372 Borland, 438/528 John O. 438/529 | 8/231 348/232 Kuba, 348/232 Hirokazu 707/100, et al. | Inventor |
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30 29 US 5867318 A US 5847422 A Document ID Kind USPAT USPAT Sourc O r 1998120 12 1999020 8 Issue Date Page 8 Wide-angle optical system parasitic bipolar action of the cell to output image data that utilizes the pixel sensor cell MOS-based active Title azimuth of the field of view of the imaging device. The three paths cells. Image data is collected during an integration period by applying a bearing axis at a bearing angle to the optical axis equal to the width in device, and two lateral optical paths image two lateral format views on a axis images a central format view on the optical axis of the imaging field of view of an imaging device to which it is fitted. A median optical height in elevation respectively greater than and less than those of the An optical system affords wide-angle imaging with a width in azimuth and a this, the image data is read out by raising the gate voltage such that the negative voltage to the gate of the MOS transistor which is sufficient to current associated with conventional bipolar-based active pixel sensor reverse-bias both the source/body and drain/body junctions. Following A MOS-based active pixel sensor cell utilizes the parasitic bipolar source/body junction remains vertical image of the cell to produce a horizontal current in lieu of the action Abstract 359/618 257/291 Current 욹 Retrieva 1 Classif 257/290 Chi, ; 257/353 Min-Hwa ; 257/354, et al. 359/419 Cordier, ; 359/431Chantal ; 359/504, et al. Current XRef 359/419 Inventor ч X Ø O ۳ 4 N ω 4 σı

32 31 US 5879447 A US 5873003 A Document ID . Kind Sourc USPAT 9 152 USPAT 1999021 46 Issue Page s Sight line detector, display unit, view finder and unit and camera with Semiconductor substrate such that an average device and its inter-atomic distance of main fabricating method constituent the same display unit Title crystallization energy is applied to the amorphous thin film to perform providing a highly reliable semiconductor device are formed by solid phase A single crystal and a polycrystal having an excellent crystal quality and an a-SiGe, and a p-type a-Si successively, an insulating film is formed, On a transparent substrate are laid down a metallic wiring, an n-type a-Si, inter-atomic distance of the elements in single crystal, and solid phase growth to thereby form a single crystal. In another average element of the amorphous thin film is 1.02 times or more of an There is provided a liquid crystal unit having an on-chip photodetector growth at low temperatures. An amorphous thin film is deposited on and then a transparent electrode is formed to have a light Abstract 117/8 Current Retrieva 396/51 Classif Current 117/9 Okada, 117/930 Takako ; 117/930 , et al. Inoue, Shunsuke , et al. Inventor U S C ы μ N \Box w 4 σ

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| | | | | ation | Semiconductor device having a semiconductor film | · · · | | | | | | | mounting them | Semiconductor memory device and various systems | | | | Title |
| | provided thereover. In accordance with this structure, oxygen particles | to impurities than the monocrystalline silicon thin film, which is | insulating film preferably has a lower diffusion coefficient with respect | which may be silicon, has an insulating film disposed thereover. The | substrate, which may comprise a transparent material, such as quartz; or | monocrystalline silicon thin film layer for device formation. A supporting | achieve superior performance by utilizing a low oxygen content | A semiconductor substrate having a silicon-on-insulator structure may | said source terminal and a second | a first terminal connected to | source terminal and a drain terminal and a ferroelectric capacitor having | includes a plurality of memory cells each having a transistor having a | microprocessor to store data, wherein said semiconductor memory device | external device; and a semiconductor memory device connected to said | device connected to said microprocessor to send/receive data to/from an | performing various arithmetic processing operations, an input/output | A computer system is characterized by comprising a microprocessor for | Abstract |
| | | | | 201/400 |)57/A50 | | | | | , | | | | 365/145 | | • | | Current OR |
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| | | | , 257/914 | ; 257/460 ; 257/460 ; 257/463 ; 257/466 | 257/443 ; 257/446 ; 257/446 ; 257/447 Saito, | 257/347 | | | | | | | , , , , , , , , , , , , , , , , , , , | 365/149 | | | | Current XRef |
| | | | | Yutaka | Saito, | | *************************************** | | | | *************** | ****************** | 0 | Takashim a, Daisabur | | | | Inventor |
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